A Role of Integrated Management of Childhood Illness (IMCI) Strategy for Changing Child Rearing Practices at Household and Community Level

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Abstract

Objectives: To find out effectiveness of IMCI Strategy for changing the practices regarding child rearing at household and community level in rural area of PHC Talegoan in Wardha district.

Methods: This Quasi-experimental study was conducted in PHC Talegoan area in the Wardha District from September 2002 to December 2004, to determine the knowledge and practices regarding child immunization, breastfeeding, child caring practices and management of childhood illness at household level. A baseline survey was conducted in the PHC area with the help of standard baseline form developed by WHO and UNICEF, in October 2002. Intervention package consisting of training regarding management of childhood illness using IMCI guidelines was given to Government Health Workers, Village Health Workers and Anganwadi Health Workers for 1½ yrs. After the intervention, the endline survey was conducted to find out the effect of the intervention in the study area.

Result: The knowledge of mothers about immunization in children up to 2 year, child nutrition and childhood illness up to 5 years has significantly improved in the study area at the endline survey as compared to baseline survey. There was significant change in hand washing practices before food preparation (41.5%) and before child feeding (44.1%) in the study area at the endline survey, whereas at the baseline survey, only 8.6 %, 12.8 % mothers washed their hands before food preparation and before child feeding respectively. In the endline survey, it was seen that 95% mothers sought treatment for minor illnesses as compared to 80% mothers in the baseline survey.

Conclusion: On the basis of the present study it may be concluded that the IMCI is useful for managing childhood illness at community level and household level and helps in improving the mother’s knowledge and practice about child nutrition and childhood illness.

Introduction

Every year about 10.5 million children die before their fifth birthday in developing countries of the World. A large number of these deaths occur during the first year of life. Nearly 70% of these deaths are due to Acute Respiratory Infections (mostly pneumonia), Diarrhoea, Measles, Malaria, and Malnutrition. Frequently a combination of these conditions is responsible for the untimely deaths in children below five years of age. Malnutrition and/or anaemia may not be the direct cause of deaths but are associated with other conditions such as ARI, Diarrhoea, Measles, and Malaria etc. Around the World three out of every four children...
seeking health care are suffering from at least one of these conditions. Countries in South-East Asia Region (SEAR) contribute to nearly 40% of these deaths. More than nine out of ten of these deaths occur in six countries of the region, namely Bangladesh, Bhutan, India, Indonesia, Myanmar and Nepal.\textsuperscript{1-3}

These serious threats to children’s health have been difficult to control for number of reasons. Inadequate living conditions, including poor water supply, hygiene and overcrowding that promote rapid spread of disease. During sickness parent face further problems. They may not recognize that their children are dangerously ill or take them for appropriate treatment. Even when treatment is sought at a health care facility, it may still fall short of what is required. Health workers frequently do not recognize that a child may have more than one condition at a time which requires treatment.\textsuperscript{4,5}

In India, there are nearly 17 lakh child deaths each year, and child mortality rates are one of the highest in the world. Although there has been a decline in under-five mortality rate in India since 1990 from 142 to 85 in 2004 but decline is slow and not uniform in all Indian states. There has been an improvement in access and coverage in the child health services provided through public health system but quality remains questionable. The government of India recognized the need to strengthen child health activities in the country and adopted IMNCI (Integrated Management of Neonatal and childhood illnesses) in 2005 in the National Programme. Success in reducing childhood mortality will not be achieved solely through the availability of health services with well-trained personnel. Effective management of childhood illness involves a partnership between families and health workers. Hence the present study was undertaken to assess the role of IMCI strategy for changing child rearing and caring practices at household level in rural area of Wardha district.

**Material and Methods**

**Study design and setting**

The present quasi-experimental study was carried out in 7 selected villages of PHC Talegoan in Wardha district during September 2002 to December 2004. Seven villages, where the population of each village was approximately 2000 and access to health facility was poor, were selected for the study. To know the knowledge and practices regarding child immunization, breastfeeding, child caring practices and management of childhood illness at household level, a baseline survey was conducted in PHC Talegoan in September 2002 with the help of standard baseline form developed by WHO and UNICEF.\textsuperscript{4} The questionnaire in the baseline survey form mainly focused on the IMCI “12” key family practices (for physical growth and development, disease prevention, appropriate home care and seeking care immediately). It was piloted in the field and relevant modifications were subsequently made to fulfill the objectives.

Before preparing the sampling frame, list of children in the age group (0 to 5 yrs) was collected from Anganwadi workers from the above mentioned villages and sampling frame was prepared. 20% of under five children were selected from the lists by systematic random sampling. In case of absence of mother at the time of interview (out of station), another eligible under five child was selected randomly from the list.

Under Child Survival Project funded by Aga Khan Foundation, the Department of Community Medicine selected one male and one female Village health worker (VHW) in
each selected village of PHC Talegoan. Training regarding management of childhood illness using IMCI guidelines was given to Government male and female Health Workers and Anganwadi Workers and Marathi translated IMCI booklet were provided to them. Intellectual capacity of above three cadres was different so the above workers were trained separately for easy understanding. The training was according to WHO guidelines and comprised of initial training and refresher training. Training was given to government health workers every fortnight for 6 months at their PHC headquarters. Considering intellectual capacity and non technical background of village health workers, training was provided to VHWs for 2 days every month for 3 months initially and then 1 day training session/month for about 1 ½ years in the Department of Community medicine.

Training was imparted to AWWs for the promotion of twelve household practices in the community so that they will provide health education to the mothers of children about childhood illnesses and helping them to improve their knowledge and practices related to it. VHWs were also given training regarding management of childhood illness using IMCI guidelines, two days every month for 6 months initially and then every month for one year. Training package comprised initial training and refresher training of IMCI as per WHO guidelines to all of them. Every Village health worker was provided with a health kit containing common drugs, thermometer, dressing materials and Marathi translated IMCI booklet. IMCI treatment cards were provided to them to assess their role in the management of childhood illness.

To find out the change occurring in the knowledge of mothers at household level and community level after IMCI training was given to the Village health workers, government health workers and AWW; endline survey was conducted in September 2004. About 140, 159 mothers of under five children were interviewed for baseline and endline survey respectively. Data thus generated, was entered and analyzed using Epi-Info 6.0. Proportion was expressed as percentages. \( \chi^2 \) test and F test were used to compare proportion and variances. P < 0.05 was taken as level of significance.

Result

Study sample characteristics

Age and sex distribution of under five children and the mean age of mothers in the study area was not significantly different at baseline survey and endline survey (Table 1).

Knowledge of mothers

At the baseline survey, 77.4% of mothers of 0-2 years of children, knew about importance of vaccination, however only 3.3%
had the knowledge regarding vaccines be
given to the child before one year of age, 77.4% mothers had knowledge about correct age of measles vaccination. At the endline survey, 91.6% of mothers knew about importance of vaccination, 33.9% knew which vaccines should be given to child before one year of age group and 83.1% mothers had knowledge about correct age of measles vaccination. The change in the knowledge of mothers of 0 - 2 years of children from baseline to endline survey was statistically significant (P ≤ 0.05).

The knowledge of child nutrition and childhood illness for the study purpose was defined, as mothers should know about exclusive breastfeeding, complementary feeding and energy rich foods and the common five childhood illnesses; i) pneumonia, ii) diarrhoea, iii) malaria, iv) measles v) malnutrition. For the study purpose danger signs in children for seeking health care immediately were high grade fever, not feeding well, convulsion, vomiting, blood in stool, increased respiratory rate and difficult breathing.

At the baseline survey, 43.6% of mothers had correct knowledge about child nutrition, 8.6% of mothers knew two vitamin A rich foods, 42.1% had knowledge of various childhood illnesses and 26.4% mothers had knowledge about two danger signs in children for seeking health care immediately. Whereas at the endline survey, 89.3% mothers had correct knowledge about child nutrition, 25.2% mothers knew two vitamin A rich foods, 90.5% mothers knew about childhood illness and 44.1% mothers had the knowledge regarding danger signs in children for seeking care immediately respectively which was found to be statistically significant (Table 2).

**Child caring and rearing practices**

Hand washing practices after self defaecation, after child defaecation, was not seen to be significantly different in the baseline survey and endline survey (p > 0.05).

At the endline survey, there was significant change in hand washing practices before food preparation (41.5%) and before child feeding (44.1%) as compared to 8.6% (before food preparation) and 12.8% (before child feeding) in the baseline survey (Table 3).

In the management of diarrhoea, 43.4% and 33.4% of children were given ORS and home available fluids (HAF) respectively by their mother at the baseline survey however; use of ORS (86.7%) and HAF (60.0%)
significantly increased at the endline survey. Practice of using at least one protective measure for prevention of malaria (27.6%) had significantly improved at endline survey as compared to 13.6%, 7.9% respectively at baseline survey (p < 0.05).

About 80.0% of mothers sought treatment for their child during their illness at baseline survey whereas 95.1% mothers sought treatment at endline survey. Compliance to follow up was only 44.4% at baseline survey however compliance to follow up was 65.7% at endline survey. Treatment seeking behaviour and compliance to follow up had significantly improved from baseline to endline survey (p < 0.05).

Discussion

Integrated Management of Childhood Illness (IMCI), a strategy fostering holistic approach to child health and development is built upon successful experiences gained from effective child health interventions like immunization, oral rehydration therapy, management of acute respiratory infections and improved infant feeding. To put emphasis on community mobilization and improvement of household practices, the household and community component of IMCI (HH/C IMCI) was launched as an essential component of the IMCI strategy in 1997. HH/C IMCI is the optimization of a multi-sectoral platform for child health and nutrition that includes three linked requisite elements: 1) Partnerships between health facilities and the communities they serve; 2) Appropriate and accessible care and information from community-based providers; and 3) Integrated promotion of key family practices critical for child health and nutrition.

In pursuance of National Health Policy (1983), RCH II and Millennium Development Health Goals, Government of India launched several interventions for child survival through primary health care approach. As a result of child survival programme, under-five mortality declined rapidly in many states during 1980’s. However, the rate of decline was slowed down considerably in most of the states during 1990’s. Initial decline occurred mainly in post-neonatal mortality due to large scale implementation of oral rehydration therapy in diarrhoea, universal immunization programme, case management of pneumonia.

<p>| Table 3: Child caring and rearing practices of mothers at baseline survey and endline survey in PHC Talegoan area |</p>
<table>
<thead>
<tr>
<th>Practice</th>
<th>PHC Talegoan area</th>
<th>Endline survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hand washing practices</td>
<td></td>
<td></td>
</tr>
<tr>
<td>After defaecation (92.5%)</td>
<td>127 (90.7%)</td>
<td>147</td>
</tr>
<tr>
<td>(self) P &gt; 0.05</td>
<td></td>
<td></td>
</tr>
<tr>
<td>After child defaecation</td>
<td>125 (89.3%)</td>
<td>145 (91.1%)</td>
</tr>
<tr>
<td>Before food preparation</td>
<td>12 (8.6%)</td>
<td>66 (41.5%)</td>
</tr>
<tr>
<td>Before child feeding</td>
<td>18 (12.8%)</td>
<td>70 (44.1%)</td>
</tr>
<tr>
<td>Household practices for management of diarrhoea</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use of ORS</td>
<td>13/30 (43.4%)</td>
<td>13/15 (86.7%)</td>
</tr>
<tr>
<td>Use of home available food</td>
<td>10/30 (33.4%)</td>
<td>09/15 (60.0%)</td>
</tr>
<tr>
<td>For prevention of malaria</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Used at least one protective measures</td>
<td>19 (13.6%)</td>
<td>44 (27.6%)</td>
</tr>
<tr>
<td>Child slept under mosquito net yesterday</td>
<td>11 (7.9%)</td>
<td>40 (25.2%)</td>
</tr>
<tr>
<td>Treatment seeking behaviour</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment sought from health provider</td>
<td>72/90 (80.0%)</td>
<td>97/102 (95.1%)</td>
</tr>
<tr>
<td>Compliance to follow up</td>
<td>40/90 (44.4%)</td>
<td>67/102 (65.7%)</td>
</tr>
</tbody>
</table>

significantly increased at the endline survey. Practice of using at least one protective measure for prevention of malaria (27.6%) and practice of using mosquito net (25.2%) had significantly improved at endline survey as compared to 13.6%, 7.9 % respectively at baseline survey (p < 0.05).
and domiciliary management of malnutrition. The Government of India has implemented pilot project of an adapted version of IMNCI in six districts: Shivpuri (Madhya Pradesh), Osmanabad (Maharashtra); Vellore (Tamilnadu); Jhalawar (Rajasthan); Valsad (Gujarat) and Mayurbhanji (Orrissa).7

In India most of the studies regarding IMCI have been hospital based. Most of the studies have found good sensitivity and specificity of IMCI guidelines. These studies have concluded that there is a sound scientific basis for adopting IMCI approach since co-existence of morbidities are frequent, several illnesses are assessed by IMCI with good sensitivity and specificity and IMCI algorithm is diagnostically and therapeutically superior to vertical disease specific algorithm. IMCI guidelines covered 81-84% of diagnosis among young infants and 92% of the recorded illnesses among the children. The referral criterion had sensitivity of 86-87% but has specificity of 53-58% among young children. There was more over diagnosis (21-23%) than under diagnosis (15-21%).8-9

In India, mortality and morbidities in under-five children due to the above-mentioned diseases are very high, if appropriate household measures were taken, it would be possible to prevent these diseases at household level. The present study was carried out to impact of IMCI training to health workers for changing child caring and rearing practices in the community.

Effects of training to health workers

After the intervention, it was found that 89.3% of mothers knew about child nutrition, mother’s knowledge about childhood illnesses was also increased (90.5%); mother’s knowledge about danger signs in children was increased (44.1%), and mother’s knowledge about any two vitamin A rich foods had increased significantly at endline survey. So it may be concluded that mother’s knowledge about child nutrition, childhood illnesses, danger signs in children and vitamin A rich foods increased at endline survey after the intervention as compared to baseline survey. (Table 3).

Hand washing practice of mothers before child feeding (44.1%) and before food preparation (41.5%) had also improved significantly at endline survey whereas it was only 12.8% (before child feeding) and 8.6% (before food preparation) respectively at baseline survey. Prevalence of diarrhoea among under five children was 21.42% in the baseline survey, whereas in the endline survey only 9.43% children were only suffering from diarrhoea, this may be due to hand washing practices of mothers before child feeding and before food preparation which has changed significantly in the endline survey. Use of ORS (86.7%) and HAF (60.0%) during childhood diarrhoea as well as practice of using mosquito net for child was also increased (25.2%) in the study area at endline survey. Treatment seeking behaviour of mothers improved significantly (95.1%), after IMCI strategy was implemented in the study area in endline survey whereas, it was (80.0%) at baseline survey. It reflected that the various practices relating to child health as described above showed an improvement at endline survey in the study area.

Though there is scarcity of community based study in IMCI, recently a community based study conducted10 in Rajasthan quoted that after IMCI training given to doctors in intervention area, 15% of intervention group mothers and 10% of control group mothers sought care from an appropriate provider promptly; one month after training, intervention site doctors counselled more effectively than control group doctors, but at six months their performance had declined.

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A greater proportion of mothers in the intervention group than in the control group knew danger signs in children. In the present study, after intervention, mother’s knowledge about at least two danger signs improved from 26.4% to 44.1% in the study area from baseline to endline survey. Treatment seeking behaviour of mothers for their child increased from 80.0% to 95.1% in study area. Similar findings were reported by a study conducted in Bihar. The findings of our study are also almost similar to the above two studies.

In the present study, compliance to follow up was increased from 58.8% to 85.9% from baseline to endline survey. A study conducted in Sudan, reported that compliance to follow up was 44% in under-five children who presented to IMCI trained health workers. A study conducted in Gondar, Ethiopia, quoted that after IMCI training, health workers gave advice to mothers about child feeding, home available fluids and when to return to health facility as compared to before IMCI training while treating patients. A community based study conducted in Chennai, India, Manjula Datta quoted that the sensitivity of the Anganwadi workers diagnosis of danger signs was moderately high, but for some specific conditions, such as dehydration or anaemia, sensitivity was low. Anganwadi workers could use the IMCI guidelines effectively for the diagnosis and management of illness but that training methods could be improved to raise the sensitivity of diagnosis relative to a physician gold standard. It provided us a feedback that the usefulness of IMCI at household level requires further validation in knowledge, skills and practices through multi centric studies.

On the basis of the present study it may be concluded that the IMCI is useful for managing childhood illness at community level and helps in improving mother’s knowledge and practice about child nutrition and childhood illness.

Acknowledgment

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References

ANTIEPILEPTIC DRUG WITHDRAWAL IN SEIZURE-FREE PATIENTS

Although about 70% of all patients with newly diagnosed epilepsy become seizure free with such drugs, why is withdrawal so controversial? What is the evidence to guide physicians and patients? There is no class I evidence that is based on randomized double-blind trials for withdrawal of antiepileptics in adults who become seizure-free while taking such drugs. It is therefore a pleasure to comment on the first randomized double-blind trial on the consequences of withdrawal of an antiepileptic in seizure-free patients.

In this benchmark study, the Akershus study, Morten Lossius and colleagues randomized adult patients, who were seizure-free for more than 2 years on a single antiepileptic drug. Relapse of 15% in the withdrawal group and in 7% in the no-withdrawal group (relative risk 2.46, 95% CI 0.85-7.08, n=0.095). The effect difference was 9% (0.00-0.20). After withdrawal, seizure relapse rates were 27% after a median of 41 months off medication.

The question is, of course, how did the no-withdrawal group do at longer follow-up? This question cannot be answered because almost all patients (except eight) in the no-withdrawal group preferred to withdraw after the study period of 12 months, and their seizure outcome is not known.

First, antiepileptic drug withdrawal in adults is associated in the following 12 months with, on average, twice the risk of seizure-relapse compared with that for those who remain on drug. However, the effect difference was small and not statistically significant.

It is reassuring, and very valuable that, according to this study of low-risk patients, the risks in terms of seizure relapse are in fact small and unfortunately, so is the chance for neuro-psychological improvement after withdrawal.